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# TRANSLATION

AERODYNAMIC BALANCES

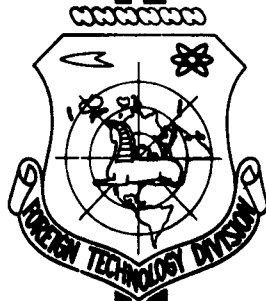
by

V. I. Zimenkov

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## UNEDITED ROUGH DRAFT TRANSLATION

### AERODYNAMIC BALANCES

BY: V. I. Zimenkov

English Pages; 3

SOURCE: Russian Patent Nr. 135271, (Appl. Nr. 666600/26, 16 May 1960), 1961, pp. 1-2

(Ref. in) S/19-61-0-22

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## Aerodynamic Balances

by

V. I. Zimenkov

Known are aerodynamic balances for measuring forces, affecting the model during its testing in a wind tunnel, made in form of a mobile table supported against three lengthy vertical pedestals.

The difference in the proposed aerodynamic balances consists in making the mobile table supports in form of a float submerged in a liquid. This enabled to eliminate the effect of friction (table supports) for the accuracy of measurement.

A schematic drawing of the aerodynamic balances is shown in Fig.

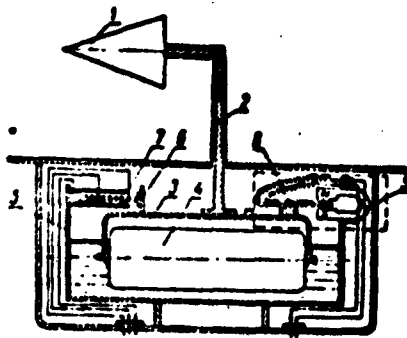
Model 1 is kept in the working section of a vacuum wind tunnel by a -shaped holder. The holder is fastened to the movable table 3, which is supported against two floats 4 in a vessel 5 with vacuum liquid (vacuum oil, glycerin, mercury etc). On one side of the moving table is fastened armature 6 of a induction transmitter coil 7 of which, representing a differential winding is attached to the wall of the vessel and out in i two arms of measuring bridge.

On the other side of the movable table is situated an arrangement, connected to the output of the measuring bridge, returning the mobile table into initial position. The rectangular coil 8 is situated with one side in the magnetic field of a permanent magnet 9, attached to the wall of the vessel 5. The amperage of coil 8 will correspond to the force, affecting the table and, consequently, to the value of the measured force, affecting the model.

### Object of Invention

Aerodynamic balances, in which the tested model, mounted on the holder, is fastened to the movable table assuring free displacements of the model

under the effect of measured force and coupled with the core of the inductive transmitter, connected to the measuring bridge circuit, distinguished by the fact that for the purpose of eliminating the effect of table supports on the measurement accuracy, the table is supported against a float, submerged in a liquid.



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